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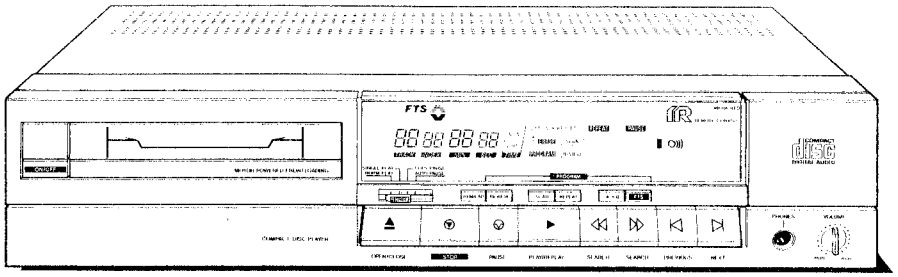
PHILIPS



CD 650

GB	Compact Disc Player
F	Lecteur 'Compact Disc'
D	Compact-Disc-Spieler
NL	Compact Disc-Speler
E	Reproductor 'Compact Disc'
I	Lettore Compact Disc
N	Compact Disc Spiller
DK	Compact Disc-Afspiller
S	Compact Disc-Spelaren
SF	Compact Disc -Soitin

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1. INTRODUCTION

Welcome to the new sound experience of Compact Disc digital audio.

The Compact Disc player
This Compact Disc player not only offers excellent sound quality, ease of use and fast access to any point on a disc, but also a number of unique features.
– It provides two different audio outputs. One gives 'pure' analogue sound, the other gives a 'warmer' analogue output as a result of extra filtering; you can use whichever you prefer.
– Favourite Track Selection (FTS) allows you to program your favourite pieces of music for any disc and choose this selection each time you play that disc. For an average of say 5 tracks per disc, your player can store selections for 150 different discs!
– If you wish, when making recordings of your Compact Discs, the player can automatically insert 4-second pauses between tracks. This is useful if your cassette player has track-seeking facilities.
– Future uses (in digital signal processing, CD-ROM, etc.) are also catered for in this player.

The Compact Disc
– Each separate piece of music on a disc is called a TRACK. Some new discs, mostly of classical music, also have INDEX numbers which show divisions within tracks. The track and index numbers for a disc are listed on the card in the disc holder, together with the titles.
– All Compact Discs are made so that they contain track, index and time information as well as the music. The player can display all this information so you can immediately see which track is being played and either the elapsed time for that track or the remaining time on the whole disc.

This booklet explains how to install and use your new Compact Disc player. Read carefully and you will soon get used to the player and all its possibilities.

2. SUMMARY OF CONTROLS ETC.

Open the flap at the back of this booklet to refer to the labelled illustrations. These show the front of the player, the display and the rear of the player.

Note: The program keyboard located at the right-hand side of the front of the player folds down for use.

Most of the controls also appear on the remote control handset.

Front of player
① ON/OFF switch: for switching the player on and off.
② Disc-tray: holds the Compact Disc.
③ PLAY MODE switch: for selecting 'NORM.(al) PLAY', 'SINGLE PLAY', 'COPY PAUSE' or 'AUTO PAUSE'.
④ Display: functions as on/off indicator; gives information about the number of tracks on the disc, the playing time, the progress of play and particular functions of the player; also signals faults during operation or programming.
⑤ REM/LAP button: for switching between remaining time indication ('REM') and elapsed time indication ('LAP') on the display.
⑥ REVIEW button: for reviewing and checking a program. The contents of the program are displayed one by one.
⑦ SCAN button: for automatically playing the beginning of each track on the disc.
⑧ REPEAT button: for repeating a disc or program.
⑨ A-B button: for setting the start and stop points of a continuous play loop.
⑩ FTS button: for programming and recalling Favourite Track Selection. This is used in conjuction with other controls.
⑪ REMOTE eye: for receiving infra-red signals from the remote control handset; a green indicator lights to show that signals are received.
⑫ 0-9 digit buttons: for moving on to a particular position on the disc or to input details during programming.
⑬ STORE button: for storing details when compiling a program.
⑭ SELECT button: for selecting a particular mode for 'go to' or programming.
⑮ CLEAR button: for cancelling mistakes when compiling a program, cancelling an item from the program, breaking a continuous play loop or erasing an FTS program for a disc.
⑯ OPEN/CLOSE button: for opening and closing the disc-tray.
⑰ STOP button: for stopping play; also erases a program from temporary memory.
⑱ PAUSE button: for holding play at the start of a track or passage, or interrupting play.
⑲ PLAY/REPLAY button: for starting play (PLAY) and returning to the beginning of a track (REPLAY).
⑳ ⏮ SEARCH button: for search backwards to a particular passage.
㉑ SEARCH ⏭ button: for search forwards to a particular passage.
㉒ PREVIOUS button: for returning to the previous track (or other earlier track) during play.
㉓ NEXT button: for moving on to the next track (or other later track) during play.
㉔ PHONES socket: for connecting headphones to listen to discs without using an amplifier.
㉕ VOLUME control for headphones: for adjusting the volume when listening with headphones.

Display

The display lights when the player is switched on and power is connected.

– The 'TRACK' indicator flashes during 'go to' or programming of tracks. The track number shows the total number of tracks on the disc, or the track which is playing or selected.

– The 'INDEX' indicator flashes during 'go to' or programming of indexes. The index number changes if parts of a track have index numbers.

– The 'MIN' or 'SEC' indicators flash during 'go to' or programming of time fragments. The numbers show: the total playing time of a disc, the elapsed time for the track being played, the remaining time of the whole disc or a program, or a selected time position.

– Either 'REM' or 'LAP' indicators (above 'TIME') show that the time displayed is remaining total time or elapsed track time.

– The 'DISC' indicator flashes immediately after loading a disc.

– The 'ERROR' indicator lights briefly if you make a mistake when operating or programming.

– 'DISC' and 'ERROR' both light briefly if the disc is loaded upside down or if the disc is missing or damaged.

– The 'PROGRAM' indicator lights when a program is stored in memory.

– The 'A-B' indicator lights when play is in a continuous loop between selected points A (start) and B (end). 'A-B' flashes when selection is not yet complete.

– The 'FTS' indicator lights when an FTS program is in operation. 'FTS' flashes when FTS button has been pressed.

– The 'SCAN' indicator lights when scanning a disc.

– The 'REVIEW' indicator lights when reviewing a program.

– The 'REPEAT' indicator lights when repeating the whole disc or part of the disc.

– The 'PAUSE' indicator lights when play is temporarily stopped.

Rear of player

ⓐ OUT 2 sockets: analogue audio output via extra filter for connection to your amplifier.
ⓑ REMOTE socket: for connection of alternative remote control.
ⓒ DIG. OUT socket: for future CD applications such as CD-ROM or digital signal processing.
ⓓ OUT 1 sockets: standard analogue output for connection to your amplifier.
ⓔ Mains connection socket: for connecting the mains lead.

3. PRECAUTIONS

– ***Always*** keep the two transport screws in a safe place. ***Always*** replace them before transporting the player.

– ***Check*** that your mains supply voltage is the same as that given on the type plate on the rear of the player. If not, contact your dealer.

– ***Never*** place the player directly on top of an amplifier which may produce considerable heat.

– ***Always*** stand the player horizontally on a flat, firm base. Allow space around it for ventilation.

– ***Never*** place the player in a hot sunny position.

– ***Never*** allow the player to get damp.

– Do ***not*** connect the player to the PHONO input of your amplifier. This is not suitable for a Compact Disc player.

– ***Never*** attempt to repair the player yourself. This will make the guarantee void.

– ***U.K. only:*** If you have to fit a mains plug, refer to 6F - 'Fitting a mains plug'.

4. INSTALLATION

The following are supplied with your Compact Disc player:

– mains lead
– audio connecting lead
– remote control handset
– batteries for remote control handset

- Remove the two transit screws. These are fitted in red collars on the underside of the player and indicated by arrows.
- Position the player as required, bearing in mind the precautions given above.
- Insert the black (left channel) and red (right channel) plugs from one end of the audio connecting lead supplied into ***either*** the OUT 1 sockets ⓓ ***or*** OUT 2 sockets ⓐ.

Whether you use the pure analogue output (OUT 1) or 'warmer' filtered output (OUT 2) is entirely up to you. Try both to see which you prefer.

- Insert the plugs from the other end of the lead into the corresponding CD or AUX sockets on your amplifier (or pre-amplifier, tuner/amp, etc.). If necessary, you can use the TUNER or TAPE IN sockets, but ***not*** the PHONO sockets.
- Insert the female plug of the mains lead into the mains connection socket ⓔ.
- Insert the mains plug into a mains socket.
- Lift back the cover at the rear of the remote control handset and insert the batteries, as indicated in the battery compartment. Then close the cover again.

Your Compact Disc player is now ready for use.

5. USING THE PLAYER

The following items are described in this section:
A. Playing a complete disc
B. Special features during play
C. Possibilities at start of play
D. Programming
E. FTS (Favourite Track Selection)
F. Other possibilities

– When using this Compact Disc player, various indications in the display explain what is happening. These display indications are given below.
– If, however, something does not occur as expected, advice is also given to explain why this may be.
– To help you to locate buttons easily, the names used throughout the text are the same as those marked on the player. The numbers in circlets refer to the main illustrations inside the back cover.

5A Playing a complete disc

- Switch on your amplifier
- Set the source selector on your amplifier to correspond to the Compact Disc player input.
- Press ON/OFF switch ①.

The display ④ lights.

If the display does not light:
Is the mains lead connected properly at both ends?
Is power available at the mains socket?

- Set PLAY MODE switch ③ to 'NORM. PLAY'.
- Press OPEN/CLOSE button ⑯.

The disc-tray ② opens.

- Place the disc ***(with the label upwards)*** centrally in the disc-tray.
- Press OPEN/CLOSE button ⑯.

The disc-tray closes.
'DISC' flashes on the display.
The disc spins for a moment and then stops.
The total number of tracks and total playing time of the disc are shown on the display.

If 'ERROR' appears briefly on the display:
Check that the disc has been inserted correctly.
Is the disc dirty or damaged in any way? (See Section 6E - Maintenance).

- Press PLAY/REPLAY button ⑲.

The disc starts to spin.
The track and index numbers refer to the track being played, starting at track 1, index 1.
The elapsed playing time (in minutes and seconds), is shown above 'MIN' and 'SEC'.
'LAP' appears above 'TIME'.
Play starts.

- You can go directly from step 6 to step 8. In this case, programming is not possible.

If no sound (or distorted sound) is heard:
Is the correct source selected on the amplifier?
Is the volume control on the amplifier set to minimum?
Is the Compact Disc player connected to your amplifier correctly? See Section 4 - Installation.
Is the player positioned horizontally?

- Press REM/LAP button ⑤ whenever you want to know the remaining time of the whole disc.

'REM' (instead of 'LAP') then appears above 'TIME' on the display; the time indication changes.

After playing the last track, the player stops automatically; the total number of tracks and the total playing time of the disc are again displayed.

- Press OPEN/CLOSE button ⑯.

The disc-tray opens.
The display shows '00'.

- Take the disc from the disc-tray.
- Press OPEN/CLOSE button ⑯.

The disc-tray closes.
'ERROR' and 'DISC' appear briefly on the display, indicating there is no disc.

- Press ON/OFF switch ①.

The display goes out.
The player is now switched off.

5B Special features during play

Short interruption of play

- Press PAUSE button ⑱.

'PAUSE' appears on the display.
The music stops but the disc continues to spin.

- Press PAUSE button ⑱ again to restart play from where it was interrupted.

◁◁ SEARCH, SEARCH ▷▷, NEXT and PREVIOUS may all be used during pause to move to a particular location. However, play will not commence until PAUSE button ⑱ is pressed again.

Stopping play

- Press STOP button ⑰.

The disc stops spinning and play stops.
The display again shows the total number of tracks and total playing time.

Moving to the next track during play

- Press NEXT button ㉓.

Play stops for a moment, then restarts at the beginning of the next track.

If there is no next track on the disc:
'ERROR' appears briefly on the display.
Play continues with the current track.

You can jump two or more tracks ahead by pressing NEXT two or more times in succession.

Moving back to the previous track during play

- Press PREVIOUS button ㉒.

Play stops for a moment, then restarts at the beginning of the previous track.

If there is no previous track on the disc:
'ERROR' appears briefly on the display.
Play continues with the current track.

You can jump two or more tracks back by pressing PREVIOUS two or more times in succession.

Returning to the start of the current track

- Press PLAY/REPLAY button ⑲.

Play stops for a moment then restarts at the beginning of the track.

Forward or reverse search during play

- Press SEARCH ▷▷ button ㉑ for a forward search.
- Press ◁◁ SEARCH button ⑳ for a reverse search.

Keep the button pressed until you reach the required piece of music.

There are three successive search speeds. If you keep the button pressed, the speed increases automatically. If you release the button for a moment, the search goes back to the lowest speed.

The first speed

– This is the slowest speed.
– It is maintained for a few seconds.
– Sound is audible.
– For location of a passage accurate to within one second.
– This speed is returned to whenever you press ◁◁ SEARCH or SEARCH ▷▷ again.

The second speed
– This speed is somewhat higher.
– Also maintained for a few seconds.
– Sound remains audible.
– For fairly accurate location of a passage.

The third speed
– This is the highest speed.
– It is reached after about 10 seconds.
– Sound is no longer audible.
– For a more general location of a passage anywhere on the disc.

If you try searching past either end of the disc:
'ERROR' appears briefly on the display.
If you reach the end of the disc and release SEARCH ▷▷, play jumps back a few seconds.

Repeating play
● Press REPEAT button ⑧.
'REPEAT' appears on the display.
The whole disc is repeated over and over.
● To stop repeat, press REPEAT button ⑧ again.
'REPEAT' goes out.
Play stops at the end of the disc.

Setting up a continuous play loop
● During play, press A-B button ⑨ at the required start point.
'A-B' flashes on the display.
'PROGRAM' appears on the display.
The start point of the play loop is set.
● Press A-B button ⑨ again when the required stopping point is reached.
'A-B' lights continuously.
The stop point of the play loop is set.
Play immediately jumps back to point A and commences from there until point B is reached. Play then returns to point A and so on.

If you wish to speed up the procedure, you can use SEARCH ▷▷ button ㉑ or NEXT button ㉓.

● To break out of the continuous play loop, press CLEAR button ⑮.
'A-B' and 'PROGRAM' go out.
The continuous play loop is broken, play continues as normal.

5C Possibilities at start of play

If you make a mistake at any time, press CLEAR button ⑮ and start again.

Starting with a particular track (Go to track...)
● Open the program keyboard (located at the right-hand side of the front of the player).
● Press the desired track number using the 0 - 9 digit buttons ⑫.
'TRACK' flashes on the display.
The selected track number is shown on the display.
● Press PLAY/REPLAY button ⑲.
Play starts at the beginning of the selected track.

If you select a track which does not exist:
'ERROR' appears briefly on the display.

Starting at a particular index number (Go to track.../index...)
● Press the required track number.
● Press SELECT button ⑭.
'INDEX' flashes on the display.
● Press the required index number.
The selected index number is shown on the display.
● Press PLAY/REPLAY button ⑲.
Play starts at the selected track and index number.

If you select an index number which does not exist:
'ERROR' appears briefly on the display.
Play starts at the beginning of the selected track (providing that it exists).

Starting at a selected time within a track (Go to track.../time...)
● Press the required track number.
● Press SELECT button ⑭ twice.
'MIN' flashes on the display.
● Enter the minutes of the desired start time.
● Press SELECT button ⑭ once more.
'SEC' flashes on the display.
● Enter the seconds of the desired start time.
● Press PLAY/REPLAY button ⑲.
Play starts at the selected time.

If you select a time position which does not exist:
'ERROR' appears briefly on the display.
Play starts at the beginning of the selected track.

Scanning a disc
● Press SCAN button ⑦.
'SCAN' appears on the display.
The first 10 seconds of each track are played in turn.
The track number indicates the track being played.
At the end of the scan, the disc stops and the display again shows the total number of tracks and total playing time of the disc.

During the scan, it is possible to use NEXT button ㉓ or PREVIOUS button ㉒.

● During scan, press PLAY/REPLAY button ⑲ the moment you hear a track you wish to play.
'SCAN' goes out.
The remainder of the disc is now played, starting at the current point.

5D Programming

You can set up and store a program to determine what parts of a disc are to be played and in what order. Your program can contain any combination of:
– track numbers
– index numbers
– start and stop times within a track
However, you are limited to 20 'memory blocks'. Each track number takes up 1 block, each index number takes up 2 blocks and each time position takes up 5 blocks. If you try to use more than 20 blocks, 'ERROR' appears on the display.
Before setting up a program, insert the disc and use OPEN/CLOSE button ⑯ to close the disc-tray.
If you make a mistake at any time, press CLEAR button ⑮ and start again.

Storing a track number
● Press the required track number, using the 0 - 9 digit buttons ⑫.
'TRACK' flashes on the display.
The track number is shown on the display.
● Press STORE button ⑬.
'PROGRAM' appears on the display.
The track number is now memorized.
● Repeat steps 1 and 2 for each track number you want to store.
The number of tracks and playing time of your program are shown on the display.

If 'ERROR' appears on the display:
Does the selected track number exist?
Are all 20 memory blocks full?

Storing an index number
● Press the required track number.
● Press SELECT button ⑭.
'INDEX' flashes on the display.
● Press the required index number.
The index number is shown on the display.
● Press STORE button ⑬.
'PROGRAM' appears on the display.
The index number is now stored.

In this case, the playing time is not added to the total playing time of the stored program, as the player is not familiar with the playing time of index numbers. The remaining time indication will therefore not be accurate.

- Repeat steps 1-4 for each index number you want to store.

Storing a specific playing time for a track
- Press the required track number.
- Press SELECT button ⑭ twice.

'MIN' flashes on the display.
- Enter the minutes of the start time.
- Press SELECT button ⑭ again.

'SEC' flashes on the display.
- Enter the seconds of the start time.
- Press STORE button ⑬.

The start time is stored.
'MIN' flashes again.
- Enter the minutes of the stop time.
- Press SELECT button ⑭ once more.

'SEC' flashes again.
- Enter the seconds of the stop time.
- Press STORE button ⑬.

The stop time is stored.
- Repeat steps 1-10 for each playing time you want to store.

Storing track numbers using SCAN
This method of programming only applies if you want to store track numbers ***in the same order*** as they appear on the disc.
- Press SCAN button ⑦.

'SCAN' appears on the display.
The first 10 seconds of each track are played in turn.
The track number indicates the track being played.
- Whenever a track which you want to store is played, press STORE button ⑬.

'PROGRAM' appears on the display.
The track number is stored.
The player immediately starts to scan the next track.
- Repeat step 2 for each track you want to program.

Reviewing a program
- Press REVIEW button ⑥.

'REVIEW' appears on the display.
Details of the selection are displayed in the programmed sequence.
If 'ERROR' appears on the display:
The memory is empty and nothing is stored.

You can review a program prior to or during programmed play.

Erasing a track, index or time sequence from a program
- Press REVIEW button ⑥.

Each item is displayed in the programmed sequence.
- Press CLEAR button ⑮ at the moment the track number appears which you want to erase.

Programmed play
- Press PLAY/REPLAY button ⑲.

Play begins with the first item of your program.
If you press PLAY/REPLAY button again, play returns to the first item of the program.
Other controls remain operative but now obey the sequence of your program rather than the order on the disc. Search (forwards or backwards) is limited to the track being played.
You can repeat the program by pressing REPEAT.
The program remains stored until you press STOP, OPEN/CLOSE or switch the player off.

Returning to the start of the current item of the program
- Press PLAY/REPLAY button ⑲.

Play stops for a moment then restarts at the beginning of that item of the program.

To erase the program
- Press STOP button ⑰.

The program is erased.

5E Favourite Track Selection (FTS)

To make a program of selected tracks permanent, so that you can use it each time you play a particular disc, you can store it in FTS memory.
The player has enough FTS memory for an absolute maximum of 226 discs. However, the number of FTS programs that can be stored depends on the number of memory blocks taken up. For example, if you store 5 tracks per disc, programs for 150 different discs may be stored.
You can recall an FTS program for a disc, whenever you want to play your previously programmed selection. However, you need not use the FTS program each time you play a disc; you can equally set up a temporary program as in Section 5D. Only one program, with a maximum of 20 memory blocks, is allowed per disc.
If you try storing two (or more) FTS programs for a disc, the earlier one is deleted and the most recent one will be used. The new program is given a new FTS ranking number.

Note: When using FTS, the FTS button ⑩ is used in conjunction with other buttons. Do not allow more than 5 seconds to elapse between pressing combinations of buttons, otherwise the player assumes you have changed your mind. If this happens, 'FTS' stops flashing. Press FTS button again to restart the command.

Storing a program in FTS memory
- Set up the required program as described in section 5D - Programming.
- Press FTS button ⑩.

'FTS' flashes on the display.
- Press STORE button ⑬.

'FTS' stops flashing.
The display indicates the FTS ranking number of this program for a few moments.
The program is stored in FTS memory under this ranking number and can be recalled whenever you insert this disc.
If 'ERROR' appears on the display:
The FTS memory is full; however, the ranking number is still lower than 254. You must erase some old FTS programs if you wish to store this program.
The ranking number exceeds 254. In this case you will have to erase the entire FTS memory; see: 'To erase the entire FTS memory'.
No program has been set up.

FTS programmed play
- Press FTS button ⑩.

'FTS' flashes on the display.
- Press PLAY/REPLAY button ⑲.

The FTS program is recalled and played automatically.
If 'ERROR' appears on the display:
There is no FTS program in memory for that disc.

To erase an FTS program for one disc
To do this, you need to know the FTS ranking number for the program you wish to erase.
- Unless you have previously noted down the ranking number, insert the disc concerned.
- Press FTS button ⑩, then PLAY/REPLAY button ⑲.

The required ranking number is indicated briefly on the display.
- Make a note of the FTS ranking number.
- Press FTS button ⑩, then REVIEW button ⑥.

The display shows the lowest FTS ranking number in memory.
- Press, and keep pressed, FTS button ⑩ and press NEXT button ㉓ as many times as necessary to reach the required ranking number.

The display shows the FTS ranking number.
If 'ERROR' appears on the display:
You have pressed NEXT too many times and gone past the last ranking number in memory; start again from step 4.

• When the required ranking number is shown, and still keeping the FTS button pressed, press CLEAR button ⑮.
The display shows '00' for a few moments.
That particular FTS program is erased from memory.

To erase the entire FTS memory
Note: Only use this to erase the FTS programs for ***all*** your discs, for example the FTS memory is full or you wish to start anew.
• Press FTS button ⑩.
'FTS' flashes on the display.
• Press PAUSE button ⑱ and keep it pressed then immediately press OPEN/CLOSE button ⑯.
The complete FTS memory is erased.
The display shows '00' for a few moments.

5F Other possibilities

PLAY MODE switch ③
This switch can be set to one of four positions:
– 'NORM. PLAY': for normal use - each track is played one after the other.
– 'SINGLE PLAY': play stops after the current track has finished, unless the player is in the REPEAT mode. In this case the current track will be played over and over.
– 'COPY PAUSE': a 4-second pause is inserted after each track before playing the next one.
– 'AUTO PAUSE': stops play at the end of a track until you press PAUSE.

Recording from your Compact Disc player*
You can of course make recordings on a cassette recorder (or other tape recorder) from your Compact Disc player. You can either connect the recorder directly to the Compact Disc player or via your Hi-Fi system.
When recording, you may find it useful to set PLAY MODE switch ③ to 'COPY PAUSE' or 'AUTO PAUSE'.
– 'COPY PAUSE' is useful if your cassette recorder has track-seeking facilities where the gaps between tracks are detected.
– 'AUTO PAUSE' enables you to determine the gaps between tracks yourself. At a later stage, you can record material from another source in this gap.

Note for users in U.K. - Recording of material may require consent. See Copyright Act 1956 and The Performers' Protection Acts 1958 to 1972.

6. ADDITIONAL INFORMATION

6A Using the remote control handset
When the player is switched on and the disc is in place, all the functions of the player, except FTS, can also be operated using the remote control handset. However, to switch off or to remove the disc, it is necessary to use the controls on the player.
The remote control handset works up to a distance of about 8 metres. A green indicator to the right of the display lights when the signal beam is received by the player.
Although the player can receive the signals also via reflection, you are recommended to aim the remote control handset directly at the REMOTE eye ⑪ as far as possible, because the power of the signal beam decreases as the batteries become drained.

6B Replacing batteries in the remote control handset
The remote control handset runs on four R03, UM4 or AAA 1.5 Volt batteries. The life of a set of batteries is normally about one year.
Remove the batteries as soon as they are flat or if you are not going to use the remote control handset for any length of time, in order to prevent damage by possible battery leakage.
• Lift back the cover at the rear of the remote control handset.
• Remove the old batteries.
• Insert the new batteries, as indicated in the battery compartment.
• Close the cover again.

6C Listening with headphones
With headphones connected to the PHONES socket ㉔, you can listen to discs without having to use an amplifier.
The headphones must have a 6.3 mm jack plug and an impedance between 8 and 1000 ohms.
You adjust the sound level with the VOLUME control ㉕.

6D Alternative remote receiver
The alternative remote receiver EM 2100 (available as an accessory) may be connected to the REMOTE socket ⑥ when, for example, the Compact Disc player is sited in a remote location (e.g. a cupboard).

6E Maintenance

Discs
Although Compact Discs are covered with a protective layer, it is still advisable to treat them carefully.
As long as you always pick up discs by the edge, and put them back in their holders immediately after use, cleaning will not normally be necessary.
However, should fingerprints, dust or dirt appear, you can wipe them off with a soft, lint-free cloth. Wipe the disc in a straight line from centre to edge.
Never use detergent, abrasive cleaning agents or cleaning agents used for conventional records!

The Player
The player mechanism is fitted with self-lubricating bearings, and must not be oiled or greased.
Only use a damp cloth to clean the outside of the player. Do not use cleaning agents containing alcohol, spirits, ammonia or abrasives.
The disc-tray should be kept free of dust.

6F IMPORTANT - Fitting a mains plug (U.K. only)
The wires in the mains lead are coloured:
Blue - Neutral
Brown - Live
As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:
The Brown wire must be connected to the terminal which is marked with the letter L or coloured Red.
The Blue wire must be connected to the terminal which is marked with the letter N or coloured Black.

Note: This apparatus must be protected by a 3 amp fuse if a 13 amp plug is used, or, if any other type of plug is used, by a 5 amp fuse either in the plug or adapter, or at the distribution board. If in doubt consult a qualified electrician.

7. TECHNICAL DATA

Typical Audio Performance
- Number of Channels: 2
- Frequency Range: 2-20,000 Hz
- Amplitude Linearity: ±0.01 dB (20-20,000 Hz)
- Phase Linearity: ±0.2° (20-20,000 Hz)
- Dynamic Range: 96 dB (20-20,000 Hz)
- Signal-to-Noise Ratio: 101 dB (20-20,000 Hz)
- Channel Separation: 100 dB (20-20,000 Hz)
- Total Harmonic Distortion: 0.0015% (20-20,000 Hz)
- Wow and Flutter: quartz crystal precision
- D/A Conversion: quadruple oversampling (176.4 kHz) with digital filter and two 16-bit D/A converters
- Error Correction System: Cross Interleaved Reed Solomon Code (CIRC)
- Audio Output Level: 2 V_{rms}
- Headphones load impedance: 8-1000 ohms

Optical Readout System
- Laser: semi-conductor AlGaAs
- Wave length: 800 nm

Signal Format
- Sampling Frequency: 44.1 kHz
- Quantization: 16 bit linear/channel

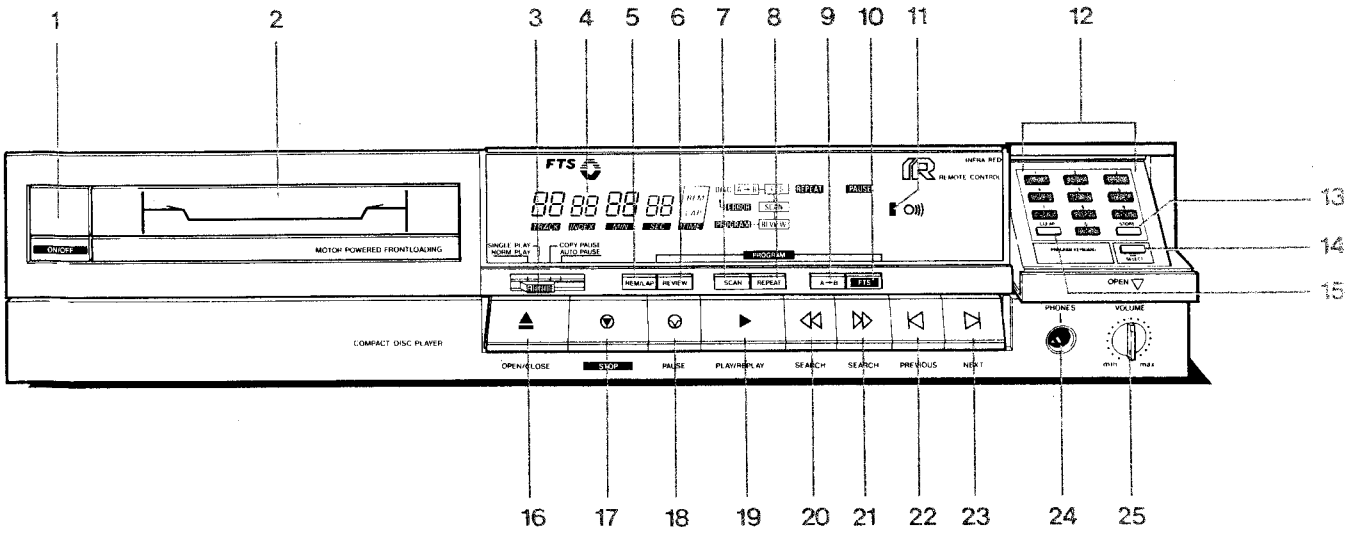
Power Supply
- Mains Voltage: see the type plate at the rear of the player
- Mains Frequencies: 50 and 60 Hz
- Power Consumption: 20 W approx.
- Safety Requirements: IEC

Cabinet, general
- Material/finish: metal and polystyrene with decorative trim
- Dimensions (w × h × d): 420 × 86 × 300 mm
- Weight: 3.5 kg approx.

Disc
- Diameter: 120 mm
- Thickness: 1.2 mm
- Direction of Rotation (seen from reading side): anti-clockwise
- Scanning Velocity: 1.2-1.4 m/s
- Rotation Speed: 500-200 rpm
- Playing Time (theoretical): 74 min (stereo)
- Track Pitch: 1.6 µm
- Material: plastic

The right is reserved to change data if necessary

This Compact Disc player complies with the radio interference requirements as laid down in EEC (European Economic Community) regulations.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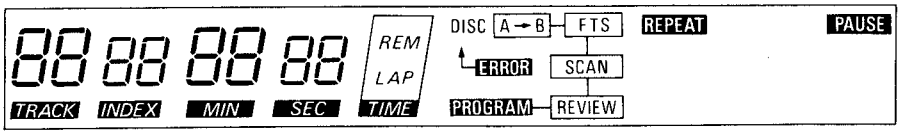
MOTOR POWERED FRONTLOADING
COMPACT DISC PLAYER
REMOTE CONTROL
PHONES
VOLUME
OPEN
OPEN/CLOSE
STOP
PAUSE
PLAY/REPLAY
SEARCH
SEARCH
PREVIOUS
NEXT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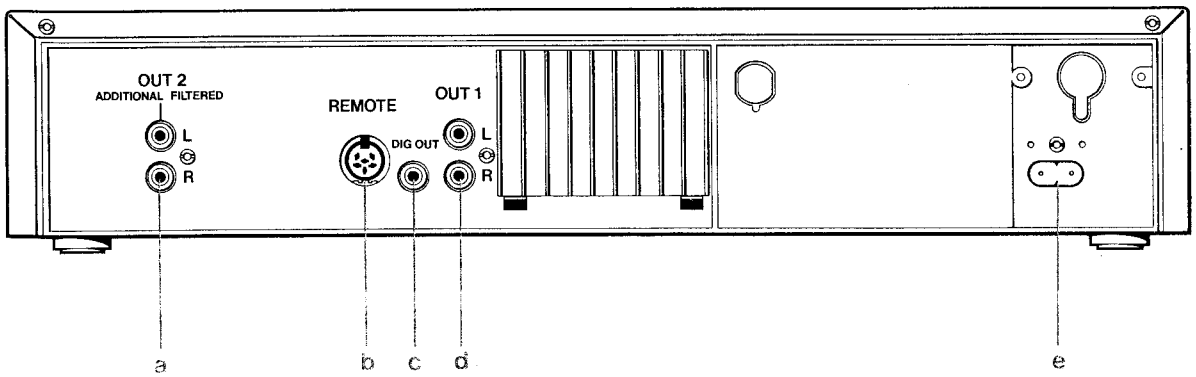
OUT 2
ADDITIONAL FILTERED
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